

WHAT IS CLAIMED IS:

- 1 1. An automatic speech recognition system, comprising:
2 a memory that stores data related to at least one of a communication
3 device, transducer, vocal information and acoustic environmental data;
4 a controller coupled with the memory that determines the data of the at
5 least one communications device, transducer, vocal information and acoustic
6 environmental data, and then compensates at least one speech recognition model to
7 reflect the data; and
8 a speech recognizer that recognizes speech utterances by using the at least
9 one compensated speech recognition model.
- 10 2. The automatic speech recognition system according to claim 1, wherein
11 the transducer data includes a distortion value related to a transducer of a mobile
12 communications device.
- 13 3. The automatic speech recognition system according to claim 1, wherein
14 the acoustic environmental data includes a background noise value that corresponds to an
15 operating environment of a mobile communications device.
- 16 4. The automatic speech recognition system according to claim 1, wherein
17 the vocal information includes a distortion value related to an end user associated with a
18 mobile communications device.
- 1 5. The automatic speech recognition system according to claim 1, wherein a
2 personal computer is used provide the data of the at least one communications device,
3 transducer, vocal information and acoustic environmental data.
- 1 6. The automatic speech recognition system according to claim 1, wherein a
2 personal digital assistant is used to provide the data of the at least one communications
3 device, transducer, vocal information and acoustic environmental data.
- 1 7. The automatic speech recognition system according to claim 1, wherein
2 the data of the at least one communications device, transducer, vocal information and
3 acoustic environmental data is provided through a satellite communications system.
- 1 8. The automatic speech recognition system according to claim 1, wherein
2 the speech recognizer is a network server using a hidden Markov model.

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1 9. The automatic speech recognition system according to claim 1, wherein
2 the controller is a network server that includes a pronunciation circuit, an environment-
3 transducer-speaker circuit and a feature space circuit.

1 10. The automatic speech recognition system according to claim 8, wherein
2 the network server updates the at least one speech recognition model and a pronunciation
3 model to reflect a specific type of communications device.

4 11. The automatic speech recognition system according to claim 1, wherein
5 the memory further stores personal account information that includes administrative
6 information relating to an end user, and a probability value that represents a probability
7 of the end user being in a particular background environment.

8 12. The automatic speech recognition system according to claim 1, wherein
9 the communications device can be configured by an end user to select a specific speech
10 recognition network.

1 13. A controller used in an automatic speech recognition system, comprising:
2 a first section that determines data related to at least one of a
3 communication device, transducer, vocal information and acoustic environmental data;
4 and

5 a second section that compensates a speech recognition model based the
6 data related to at least one of the communications device, transducer, vocal information
7 and acoustic environmental data;

1 14. The controller according to claim 13, wherein the controller identifies a
2 mobile device by a radio frequency identification tag.

1 15. The controller according to claim 13, wherein the acoustic environmental
2 data is determined using at least one microphone in an end user's environment.

1 16. The controller according to claim 13, wherein the acoustic environmental
2 data is determined using a plurality of microphones that are selectively initiated as an end
3 user walks in between the plurality of microphones.

1 17. The controller according to claim 13, wherein the transducer data is a
2 distortion value based on a difference between an actual transducer in the mobile device
3 and a response characteristic of a transducer used to train the speech recognition model.

1 18. The controller according to claim 13, wherein the vocal information
2 represents a variability that exists in vocal tract shapes among speakers of a group.

1 19. The controller according to claim 13, wherein the controller communicates
2 with a memory that stores various acoustic environmental models and various features of
3 a specific type of mobile device.

1 20. The controller according to claim 19, wherein a third section stores
2 personal account information for each end user.

1 21. A method of using an automatic speech recognition system, comprising
2 the steps of:
3 receiving speech utterances into the automatic speech recognition system;
4 determining data related to at least one of a communications device,
5 transducer, vocal information and acoustic environmental data;
6 compensating a speech recognition model based on the data related to at
7 least one of the communications device, transducer, vocal information and acoustic
8 environmental data; and
9 recognizing the speech utterances as speech data using the compensated
10 speech recognition model.

11 22. The method according to claim 21, wherein the transducer data includes a
12 distortion value related to a transducer used in a mobile device.

13 23. The method according to claim 22, wherein the data related to the acoustic
14 environmental data includes a background noise value that corresponds to an operating
15 environment of a mobile communications device.

16 24. The method according to claim 21, wherein the data of the at least one of a
17 communications device, transducer, vocal information and acoustic environmental data is
18 received from a cellular telephone.

1 25. The method according to claim 21, wherein the data of the at least one of a
2 communications device, transducer, vocal information and acoustic environmental data is
3 received from a personal digital assistant.

1 26. The method according to claim 21, wherein the data of the at least one of a
2 communications device, transducer, vocal information and acoustic environmental data is
3 received via a satellite communications system.

1 27. The method according to claim 21, wherein the speech recognition model
2 is a hidden Markov model.

